

WHAT IS CLAIMED IS:

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1 A method of distributing virtual circuit identifiers associated with gateways in a network, comprising:

receiving, at a first node, packets comprising a plurality of first virtual circuit identifiers associated with gateways in the network;

5 determining if any of the gateways are connected to the first node;  
assigning second virtual circuit identifiers to connected gateways; and  
initiating the transmission of a message to the connected gateways informing the connected gateways of the plurality of first virtual circuit identifiers.

2. The method of claim 1, further comprising:

initiating transmission of a packet to neighboring nodes informing the nodes of the assigned second virtual circuit identifiers and the plurality of first virtual circuit identifiers.

3. The method of claim 1, further comprising:

updating at least one virtual circuit table stored at the first node using the first virtual circuit identifiers.

4 A network device, comprising:

at least one network interface configured to:

receive packets comprising a plurality of first virtual circuit identifiers associated with gateways in a network; and

5 at least one processor configured to:  
determine if any gateways are connected to the network device,  
assign second virtual circuit identifiers to connected gateways, and  
initiate the transmission of a message to the connected gateways informing the  
connected gateways of the plurality of first virtual circuit identifiers.

5. The network device of claim 4, wherein the at least one processor is further  
configured to:

initiate transmission of a packet to neighboring nodes informing the nodes of  
the assigned second virtual circuit identifiers and the plurality of first virtual circuit  
5 identifiers.

6. The network device of claim 4, further comprising:  
a memory configured to store at least one virtual circuit table; and  
where the processor is further configured to:

update the at least one virtual circuit table using the first virtual circuit  
5 identifiers.

7. A computer-readable medium containing instructions for controlling at least one  
processor to perform a method of distributing virtual circuit identifiers associated with  
gateways in a network, the method comprising:

receiving, at a first node, packets comprising a plurality of first virtual circuit  
5 identifiers associated with gateways in the network;

determining if any of the gateways are connected to the first node;  
assigning second virtual circuit identifiers to connected gateways; and  
initiating the transmission of a message to the connected gateways informing the  
connected gateways of the plurality of first virtual circuit identifiers.

8. The computer-readable medium of claim 7, the method further comprising:  
initiating transmission of a packet to neighboring nodes informing the nodes  
of the assigned second virtual circuit identifiers and the plurality of first virtual circuit  
identifiers.

9. The computer-readable medium of claim 7, the method further comprising:  
updating at least one virtual circuit table stored in the first node using the first virtual  
circuit identifiers.

10. A network comprising:  
a plurality of gateways; and  
a router connected to at least one of the plurality of gateways and configured to:  
receive packets comprising a plurality of first virtual circuit identifiers  
associated with the plurality of gateways in the network,  
assign second virtual circuit identifiers to the at least one of the plurality of  
gateways, and

10 initiate the transmission of a message to the at least one of the plurality of gateways informing the at least one gateway of the plurality of first virtual circuit identifiers.

11. The network of claim 10, wherein the router is further configured to:

initiate transmission of a packet to neighboring nodes in the network informing the nodes of the assigned second virtual circuit identifiers and the plurality of first virtual circuit identifiers.

12. The network of claim 10, wherein the router is further configured to:

update at least one virtual circuit table stored in the router using the first virtual circuit identifiers.

13. A method of forwarding packets received at a first gateway in a network, comprising: receiving a message at the first gateway, the message comprising a plurality of virtual circuit identifiers associated with other gateways in the network;

5 receiving packets for transmission from the first gateway to a destination address associated with a second gateway; and

sending the received packets towards the second gateway using one of the received plurality of virtual circuit identifiers.

14. The method of claim 13, further comprising:

updating at least one virtual circuit table stored at the first gateway using the plurality of virtual circuit identifiers.

15. A computer-readable medium containing instructions for controlling at least one processor to perform a method of forwarding packets received at a first gateway in a network, the method comprising:

5 receiving a message at the first gateway, the message comprising a plurality of virtual circuit identifiers associated with other gateways in the network;

receiving packets for transmission from the first gateway to a destination address associated with a second gateway; and

sending the received packets towards the second gateway using one of the received plurality of virtual circuit identifiers.

16. The computer-readable medium of claim 15, the method further comprising:

updating at least one virtual circuit table stored at the first gateway using the plurality of virtual circuit identifiers.

17. A gateway comprising:

an interface configured to:

receive a message comprising a plurality of virtual circuit identifiers associated with other gateways in a network,

- 5 receive a packet intended for transmission from the gateway to a destination address associated with a second gateway in the network; and
- at least one processor configured to:
- initiate transmission of the received packet towards the second gateway using one of the plurality of received virtual circuit identifiers.
18. The gateway of claim 17, wherein the at least one processor is further configured to:
- update at least one virtual circuit table stored at the gateway using the plurality of virtual circuit identifiers.
- ~~19.~~ A system for forwarding packets received at a first gateway in a network, the system comprising:
- means for receiving a message at the first gateway, the message comprising a plurality of virtual circuit identifiers associated with other gateways in the network;
- 5 means for receiving packets for transmission from the first gateway to a destination address associated with a second gateway; and
- means for sending the received packets towards the second gateway using one of the received plurality of virtual circuit identifiers.

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